Section XVII: Identification of Tablets, Capsules and Other Prescription Drugs

I. Introduction:

Class A through E tablets and capsules are screened and analyzed by GC/FID and subsequently confirmed by GC/MS. However, a preliminary analysis is performed using the computerized Identidex Imprint Identification program within the Micromedex Healthcare Series. The samples are extracted by a simple solvent extraction procedure. However, an extraction procedure specific for non-volatile organic poisons can also be used (See Section IX).

II. Reagents:

A.) Ethanol or Methanol
B.) Methanol (GC solvent rinse)
C.) Petroleum Ether (solvent for certain extractions)
D.) Ammonium Hydroxide, NH_4OH (used for samples containing Acetaminophen)

III. Equipment:

A.) Analytical balance
B.) Magnifying microscope or magnifying glass
C.) 2 mL autosampler vials with Teflon caps
D.) Pipettes
E.) GC/FID: HP 6890 or 7890A series
F.) GC/MS: HP 7890A/5975C or HP 6890/5973 series
G.) Computer with Identidex Imprint Identification program and/or online resources such as drugs.com, pharmer.org.
H.) PDR reference books and DrugBible textbook.

IV. Procedure:

A.) Imprint Identification

1. Observe any imprint on tablet or capsule samples. Use a microscope or magnifying glass if necessary.
2. Record actual imprint, color, and shape of tablets or capsules in logbook.
3. On computer with Micromedex Healthcare Series, log onto the Identidex Imprint Identification page.
4. Enter the imprint code.
5. The program will access the database.
6. The identification, description and classification of the drug will appear. Read and verify that the computer's description matches your sample's description.
7. Print out the results, record results in logbook and file with the sample paperwork.

B.) Chromatography by GC/FID and GC/MS

1. All Class A through D tablet, capsule and other prescription drugs must be analyzed by GC/FID and GC/MS.
2. Most Class E prescription drugs are analyzed by visual description only except for Steroids (See Section XVI)
3. If capsule or tablet contains no identifiable imprint code or if sample is in a powder form, the sample must be analyzed by GC/FID and GC/MS.
4. Place ¼ to ½ of tablet/capsule or 5 mg of powder sample into a 2 mL autosampler vial.
5. Add 1-2 mL of Ethanol or Methanol, or 1 drop of NH_4OH and 1-2 mL of Petroleum Ether if the sample contains Acetaminophen.
6. Place on GC/FID autosampler and run with regular sequence (STD, BLK, Samples).
7. GC/FID and GC/MS conditions are as follows:
   Methods: EXP.M, EXPSL.M, STER.M
   Oven:
      Initial Temp: 245°C
      Initial Time: 0.00 min.
      Rate: 10°/min.
      Final Temp: 290°C
      Run Time: 10 min, 15 min, 30 min, respectively
      Max. Temp: 325°C
      Equilibration Time: 0.5 min.
   Inlet:
      Mode: split (35:1)
      Initial Temp: 250°C
      Pressure: 24.99 psi
      Gas Type: Helium
   Column:
      Capillary: HP-1 30m x 320um
      Initial Flow: 3.3 mL/min.
   Detector:
      Temp: 300°C
      Hydrogen Flow: 30.0 mL/min.
      Air Flow: 400 mL/min.
      Makeup Gas: Helium

   Method: HYD.M
   Oven:
      Initial Temp: 130°C

Initial Time: 2.50 min.
Max. Temp: 325°C
Equilibration Time: 0.50 min.
Rate: 10°/min.
Final Temp: 280°C
Run Time: 30 min.

Inlet:

Mode: split (50:1)
Initial Temp: 250°C
Pressure: 31.65 psi
Gas Type: Helium

Column:

Capillary: HP-1MS 30m x 0.530mm
Max. Temp: 300°C
Initial Flow: 1.0 mL/min.

8. Obtain chromatographs. If sample contains any controlled substance the instrument will detect a total ion peak with a retention time characteristic of that compound and will generate a report with accompanying chromatograph and spectra (MS). The spectra will contain the identity if the peak and its ion abundance.
9. Check concentration to determine if dilutions are needed or if the injection volume needs to be increased. Also observe any erroneous data that indicates that the sample may have to be reinjected.

V. Results:

A.) For the Identidex Imprint Identification procedure, record the identity of the sample in the logbook, as well as on the evidence cards that came with the samples. Be sure to include date of analysis, results, and initials. Also, print out the results from the computer and file it with that sample number's paperwork.

B.) Record results of the GC/MS in logbook. Then transfer the results to appropriate evidence sheets that came with the actual samples. Be sure to include date of analysis, net weight if applicable, number analyzed, check whether analyzed by appearance and labeling only, results, and signature.

C.) All reports generated from the instruments should be filed so that they may be accessed at a later date, if necessary.